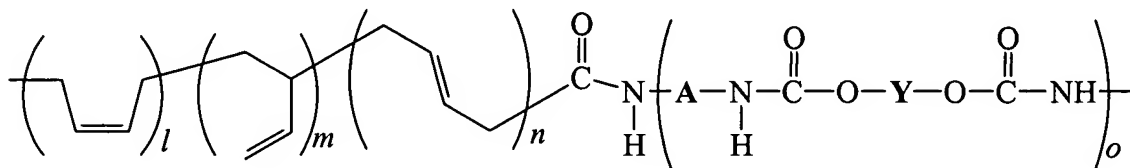


## ABSTRACT OF THE DISCLOSURE

Disclosed is a novel high 1,4-cis polybutadiene-polyurethane copolymer and a preparation method thereof. The present invention provides a high 1,4-cis polybutadiene-polyurethane copolymer represented by the following formula 1 and having an average molecular weight of at least 100,000, and a method for preparing the high 1,4-cis polybutadiene-polyurethane copolymer that includes polymerizing 1,3-butadiene or butadiene derivatives with a catalyst comprising a rare earth compound, a halogen-containing compound and an organoaluminum compound in the presence of a non-polar solvent, to prepare a polybutadiene having a high 1,4-cis content of at least 95 %; and then introducing a polyurethane group to the polybutadiene. The high 1,4-cis polybutadiene-polyurethane copolymer thus obtained exhibits low cold flow and high affinity to silica or carbon black in admixture as well as excellent in elasticity and abrasion resistance:

Formula 1



where l, m, n and o represent the number of repeating unit, l is 94 to 99 %, m is 0 to 5 %, n is 0 to 5 %, l+m+n = 100 %, 1/(m+n) is 15 to 100, o is 1 to 100 %; and A and Y are C<sub>1</sub>-C<sub>20</sub> alkyl or aryl, respectively.